

Stereo Cassette Deck

Operating Instructions

TC-WR545/WR741

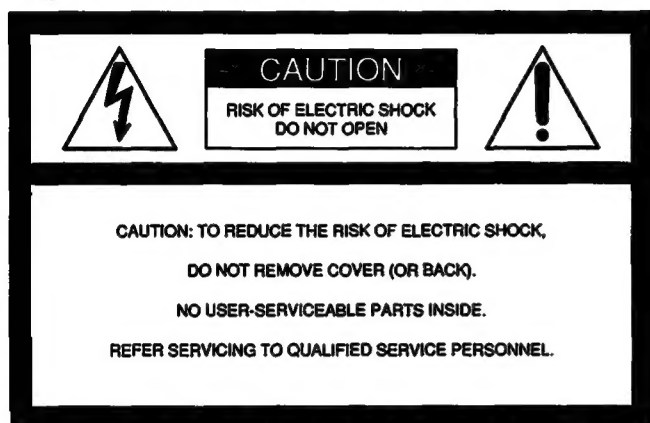
WARNING

Owner's Record

The model and serial numbers are located on the rear of the unit. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

For the customers in Canada

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

NOTICE FOR CUSTOMERS IN THE UNITED KINGDOM

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS 1362, (i.e. marked with ⬢ or ⬢ mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

IMPORTANT

If the plug supplied is not suitable for the socket outlets in your home, it should be cut off and an appropriate plug fitted in accordance with the following instructions.

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows: The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red. Do not connect either wire to the earth terminal in the plug which is marked by the letter E or by the safety earth symbol \perp or coloured green or green-and-yellow.

WARNING

To prevent shock hazard, do not insert the plug cut off from the mains lead into a socket outlet. This plug cannot be used and should be destroyed.

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Features

For higher quality recording/playback

- **B and C type Dolby* NR systems** which reduce tape noise.
- **Dolby HX PRO*** system for higher linearity in the tape's high-range response during recording (TC-WR545 only).
- **Automatic calibration** to obtain the best recording conditions for every tape (TC-WR545 only).

For your convenience

- **Automatic tape type detection** during playback and recording.
- **A relay function** for long playback.
- **Synchronized dubbing** at normal or high speed.
- **Multi-AMS function** for easy access to specific selections.
- **RMS function** for playing back or recording specific selections in the order you want (TC-WR545 only).

For easier operation

- **Twin easy-to-read digital counters** showing the elapsed recording or playing time on each deck.

Differences between the models

This instruction manual covers the TC-WR545 and TC-WR741. The TC-WR545 has the following features which are not found in the TC-WR741.

- Automatic calibration function
- RMS function
- MPX FILTER switch
- Dolby HX PRO* system
- PHONES jack

Note: All illustrations in this manual show the TC-WR545.

* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Precautions

On safety

- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it will not be used for a long time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

On operation

- When the unit is not used, turn the power off to conserve energy and to extend the useful life of your unit.
- Because of a safety mechanism, the function buttons will not operate if the cassette holder is not completely closed, if there is no cassette in the cassette holder, or if a cassette has been incorrectly inserted into the cassette holder.

On head cleaning

The head and tape path should be cleaned after every ten hours of operation. Dirty heads and a dirty tape path may cause:

- loss of high-frequency response
- loss of sound volume
- sound drop-out

If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

For the customers in the U. S. A.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

Unpacking

Checking the Supplied Accessories

Make sure that the following supplied accessories are included with your unit.

- Audio connecting cords (2)

Notes on Installation

- Place the unit with the front panel facing you in a location with adequate air circulation to prevent overheating of the unit.
- Do not place the unit:
 - near heat sources such as radiators or air ducts.
 - in places subject to direct sunlight, excessive dust, mechanical vibration or shock.
 - in an inclined position.
 - on a rug or other soft surfaces that would block the ventilation holes on the bottom of the unit.

Do not throw away the carton and the packing material

They will come in handy when transporting the unit or shipping it for servicing.

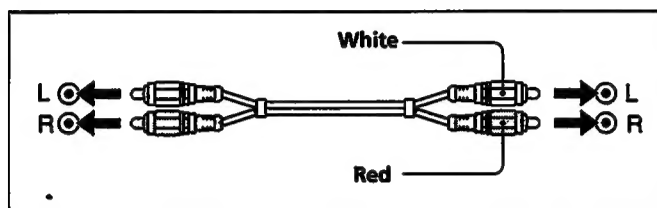
Checking the Operating Voltage

- Operate the unit only on 120 V AC, 60 Hz (U.S.A. and Canada model), 240 V AC, 50 Hz (U.K. model) or 240 V AC, 50/60 Hz (Australia model).
- Before connecting the unit to an AC outlet, be sure that the operating voltage of your unit is identical with that of your local power supply.

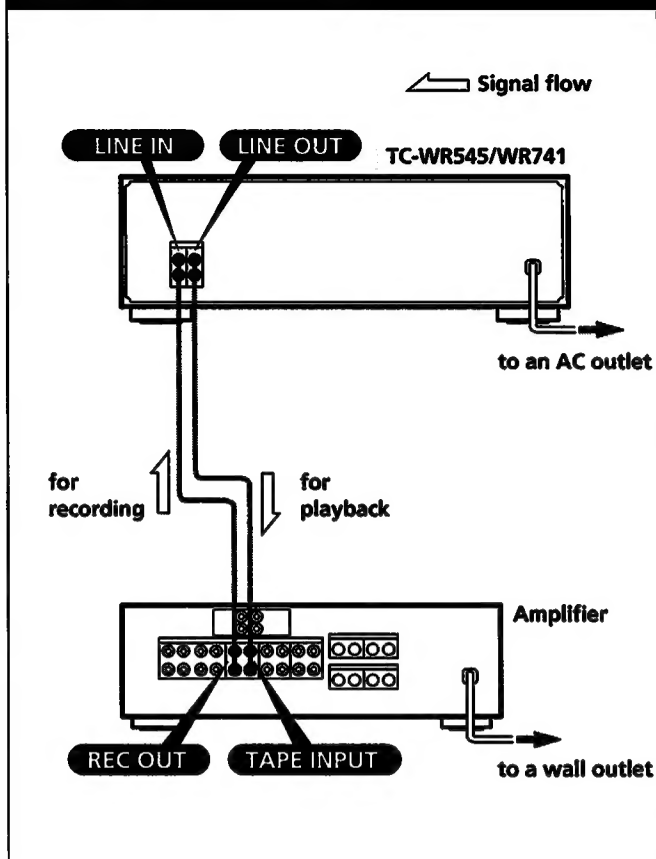
Hooking Up the System

Before You Begin

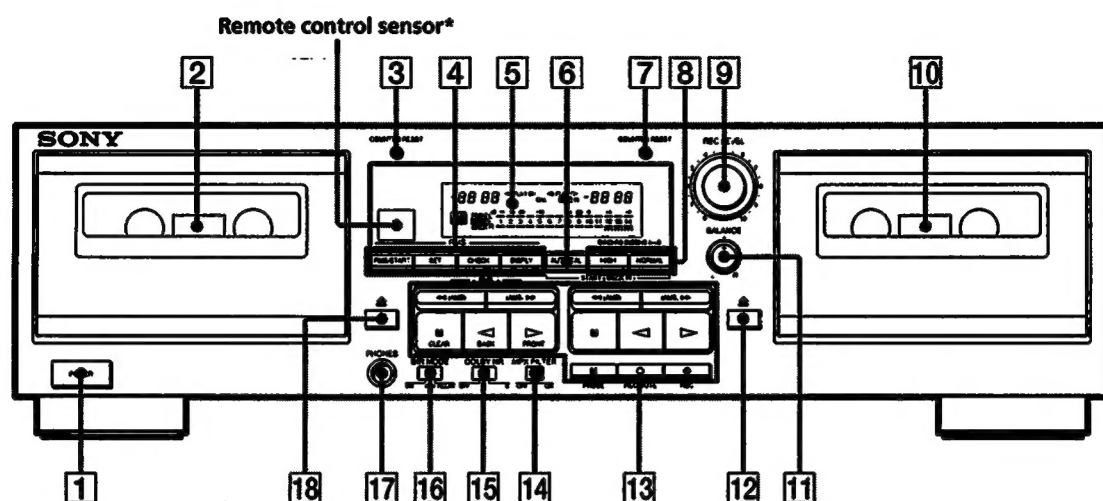
- Turn off the power to all equipment to be connected before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.
- The connecting cords should be fully inserted into the jacks. A loose connection may cause hum pickup.



Hooking Up an Amplifier



Identifying the Parts on the Front Panel





(The illustration shows the TC-WR545.)

For details, refer to the page number(s) indicated in parentheses.

- 1** POWER switch
- 2** Deck A
- 3** COUNTER RESET button (deck A)
- 4** RMS** operation buttons (TC-WR545 only) (pages 10, 11 and 18)
RMS/START button
SET button
CHECK button
DISPLAY button
- 5** Display panel
- 6** AUTO CAL button (TC-WR545 only) (page 14)
- 7** COUNTER RESET button (deck B)
- 8** SYNCHRO DUBBING buttons (page 16)
HIGH button
NORMAL button
- 9** REC (recording) LEVEL control (pages 12 and 13)
- 10** Deck B
- 11** BALANCE control (page 12)
- 12** ⏏ (eject) button (deck B)

- 13** Tape operation buttons
◀◀ (leftward fast-winding)/AMS*** /RMS**- button
▶▶ (rightward fast-winding)/AMS*** /RMS**+ button
■ (stop)/(RMS**) CLEAR button
◁ (reverse play)/(RMS**) BACK button
▷ (forward play)/(RMS**) FRONT button
⏏ PAUSE button (deck B only)
○ REC MUTE (record muting) button (deck B only) (page 15)
● REC (recording) button (deck B only)
- 14** MPX FILTER switch (TC-WR545 only) (pages 13)
- 15** DOLBY NR (Dolby noise reduction) switch (pages 7 and 12)
- 16** DIR (direction) MODE switch (pages 7, 8, 12 and 16)
- 17** PHONES jack (stereo phone jack) (TC-WR545 only)
- 18** ⏏ (eject) button (deck A)

* Remote control sensor

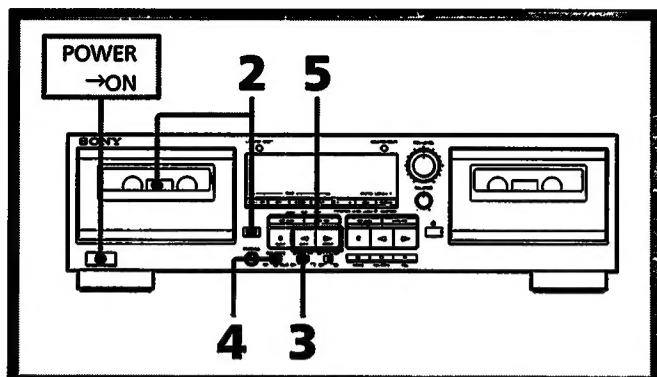
- You can remotely control this cassette deck with:
- A remote commander that came with a Sony amplifier or receiver if it has the  mark and cassette deck control capability.
 - Any optional Sony remote commander with the  mark and cassette deck control capability.

** Random Music Sensor (TC-WR545 only)

*** Automatic Music Sensor

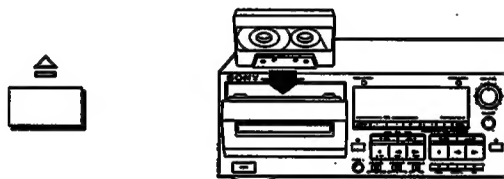
Playing Back

Follow the procedure below to play back a cassette on deck A or B.

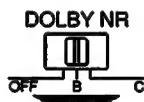


1 Turn on the amplifier and select the tape function.

2 Insert a cassette.



3 Set DOLBY NR to the same position that was used when the cassette was recorded.



4 Set DIR MODE.

To play back to the end of one side only	
To play back both sides continuously*	

* After playing back five times, the deck automatically stops.

5 Press ◀ or ▶ to start playback.

To play back from the front side, press ▶.

To play back from the reverse side, press ◀.

The tape direction lights up to show the side you are listening.

To stop playback, press the ■ button.

To stop playback momentarily, press the || button (only on deck B).

To restart play, press the ||, ◀ or ▶ button.

To fastwind a tape rightward, press the ►► button in stop mode.

To fastwind a tape leftward, press the ◀◀ button in stop mode.

Specifying the tape type is unnecessary

The deck has an automatic tape-type detection system.

To begin recording during playback

While holding down the ◀ or ▶ button, press the ● button.

The unit immediately begins recording without stopping the tape. This function is useful when editing previously recorded material.

When both decks A and B are in playback mode

Only playback from deck A will be audible.

What is the Dolby NR system?

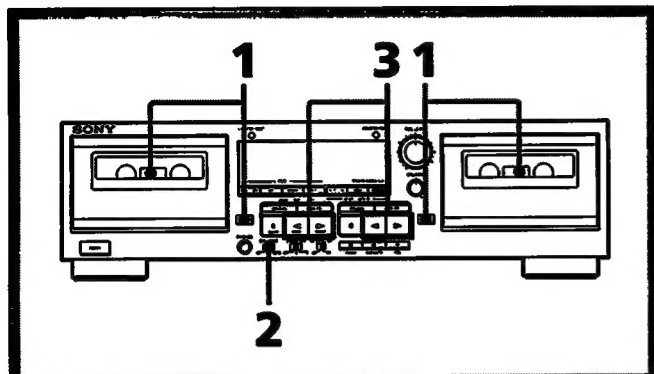
The Dolby NR (noise reduction) system reduces tape hiss noise in low-level, high-frequency signals by boosting the signals during recording and lowering them during playback.

Note

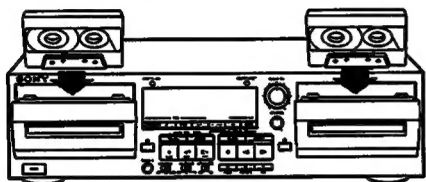
The Dolby HX PRO system works only during recording, not during playback (TC-WR545 only).

Playing Back Both Decks in Succession — Relay Play

The Relay Play function plays back cassettes in deck A and deck B continuously and in consecutive order.



1 Insert cassettes into both decks.



2 Set DIR MODE to RELAY.



3 Press ◀ or ▶ to start playback of the cassette to be listened to first.

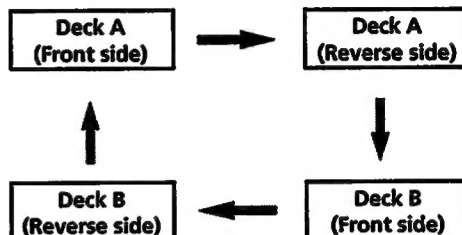
To play back from the front side, press ▶.

To play back from the reverse side, press ◀.

Playback sequence of Relay Play

Relay Play always follows the sequence below regardless of where playback starts.

After playing back five times, Relay Play automatically stops.



Playing back more than two cassettes in succession

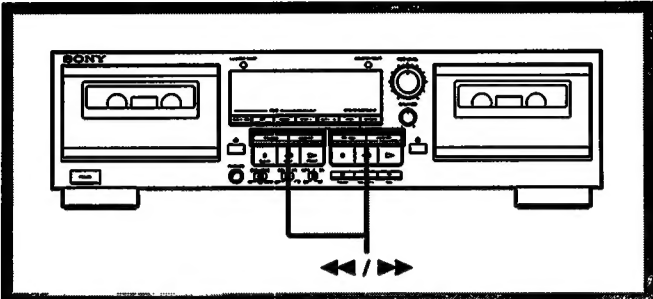
Replacing cassettes that have finished playing with new ones allows you to play back two or more cassettes alternately on each deck.

To stop Relay Play

Press the ■ button of the deck playing.

Locating a Selection — Multi-AMS (Automatic Music Sensor)

Through its ability to detect the blank space between selections, the Multi-AMS function allows you to skip up to 30 selections while fast-forwarding or reversing to the beginning of a specific selection.

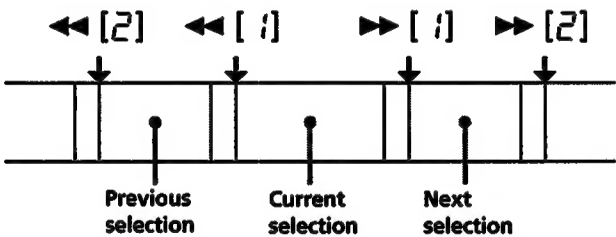


During playback, press ◀▶ or ▶▶ as many times as the number of selections to be skipped.

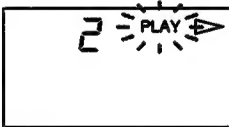
Playback direction indicator	To locate a selection after the current one	To locate a selection before the current one*
▷	▶▶	◀◀
◁	◀◀	▶▶

* Pressing ◀◀ or ▶▶ once locates the beginning of the current selection.

Tape direction indicator: ▷
↓ : Beginning of selection



- Each time the unit detects a blank space, the indicated Multi-AMS number decreases by one.
- The PLAY indicator flashes during Multi-AMS operation.
- When the beginning of the specified selection is reached, the counter indication appears again and playback automatically restarts.



Changing the indicated number of selections to be skipped

Press the ◀◀ or ▶▶ button at any time, even during Multi-AMS operation.

The Multi-AMS number may change as you are setting it

due to the detection of blank spaces as the unit begins to fastwind.

The Multi-AMS may skip a selection in the following cases:

- If you press the ▶▶ (or ◀◀) button immediately before the selection.
- If there is noise in the space before the selection.
- If the space before the selection is less than four seconds long.

The Multi-AMS will treat the following as blanks:

- A long pause in the music
- A passage of low frequencies or very low volume
- A gradual increase or decrease in volume

The Multi-AMS does not function on both decks simultaneously

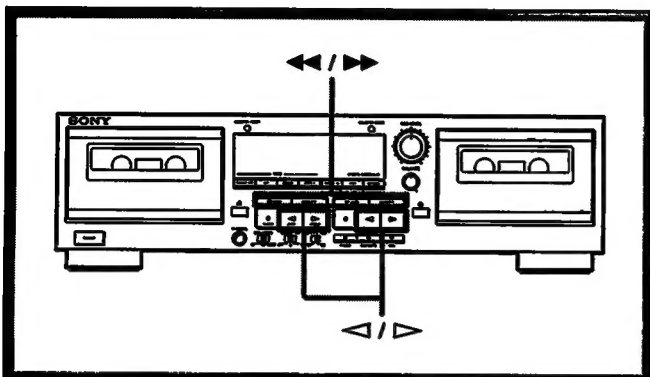
The Multi-AMS is disabled on one deck whenever the other deck is in playback, recording or pause mode.

Note

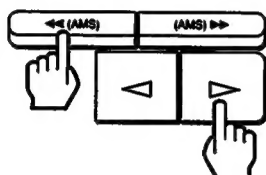
Even if the DIR MODE switch is set to ↔, the Multi-AMS function does not extend to the other side, but stops when the first side comes to an end.

Playing Back Automatically After Rewinding — Auto Play

The Auto Play function automatically starts playing back a cassette after fastwinding it to the beginning.



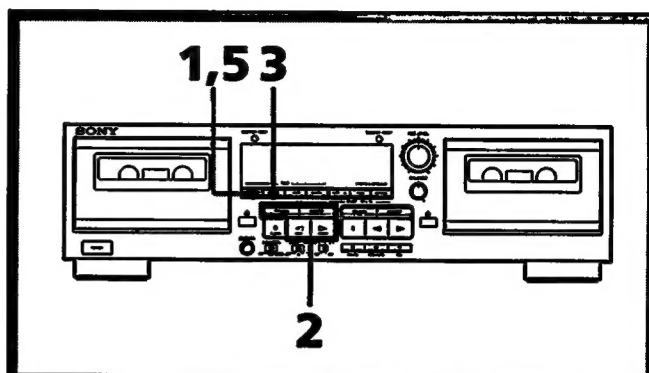
While holding down \triangleright or \triangleleft , press \ll or \gg .



From the beginning of...	While pressing...
front side	\triangleright , press \ll .
reverse side	\triangleleft , press \gg .

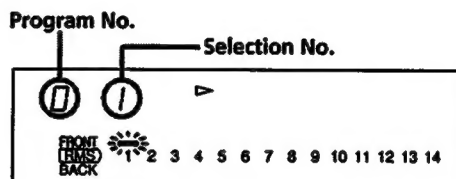
Playing Back Selections in a Specified Order — RMS Playback (TC-WR545 Only)

The RMS (Random Music Sensor) function allows you to determine the playback order of specific selections. You can choose from selections 1 to 14 on each side of a tape in deck A to create a program of up to 28 selections.

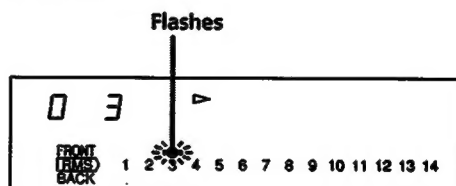


1 While the tape is stopped, press RMS/START.

The RMS indicator and a flashing cursor appear in the display window and the unit enters RMS mode.

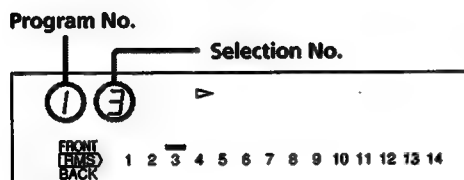


2 Press \triangleright or \triangleleft to select the front or back side of the tape, and \ll or \gg to specify the selection.



3 Press SET to program a selection.

The program number increases by one and the specified selection is programmed. To program the same selection repeatedly, press SET as many times as required. The same selection is programmed for consecutive program numbers.



4 Repeat steps 2 and 3 to program other selections.

A cursor lights up to mark each programmed selection.

5 After programming the last selection, press RMS/START to start RMS playback.

The unit rewinds the tape to the beginning of the first side, then goes to the first selection using the Multi-AMS function. After RMS playback finishes, deck A remains in RMS mode.

To stop RMS playback

Press the ■ button.

To cancel RMS mode

Press the ■ button repeatedly until the peak level meter display reappears or eject the tape in deck A. When RMS mode is cancelled, the RMS program is automatically erased.

To erase the program

While programming, press the ■ button. The program number returns to 0 and the cursor flashes above selection 1 in the display window.

To add selections to a program

Press the ■ button on deck A during RMS playback, or wait until RMS playback ends, then use the ◀◀ or ▶▶ button to add new selections to the existing program.

To check the contents of a program

Press the CHECK button anytime while RMS mode is active. Pressing the button shows each programmed selection in the order they were programmed, starting with the first. Pressing the button after the last selection causes "End" to appear momentarily in the display window.

To alternate between the RMS and peak level meter displays

Press the DISPLAY button. The peak level meter display does not change if there is no RMS program.

When "FULL" flashes in the display window

This means that you have programmed 28 selections.

Notes

- During RMS playback, the CHECK, DISPLAY, ■ buttons on deck A, and the ◀◀, ▶▶, ■ buttons on deck B are operative.
- The Multi-AMS function may skip a selection if:
 - there is noise in the space before the selection.
 - the space before the selection is less than four seconds long.
- If there is a blank space of more than 13 seconds long, the unit will fast-forward the tape until the end of the blank space.
- If the unit encounters a program number that exceeds the number of selections on the tape, the unit fast-forwards the tape to the end, erases that and all excessive program numbers from the program, then continues RMS playback if program numbers for existing selections remain, or stops RMS playback if no program numbers remain.

RMS Programming Using a Sony Stereo Receiver Remote Commander

If you have a Sony stereo receiver with a remote commander with RMS operation buttons, you can use the remote commander to perform RMS programming.

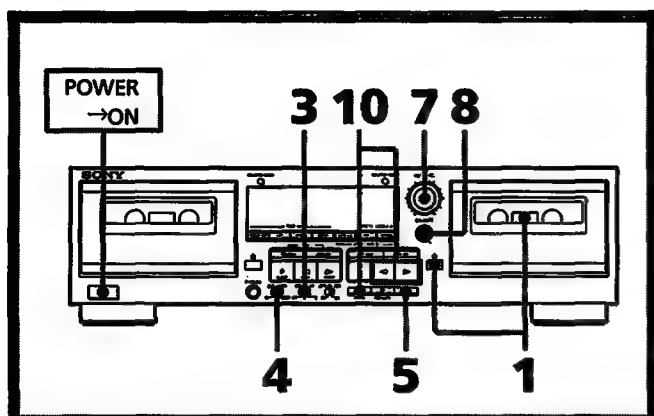
- 1 Turn on the receiver and press TAPE.
- 2 Press RMS/START.
- 3 Press ▶ or ◀ to select the front or back side of the tape, and the numeric keys and the >10 key to specify the selections.
- 4 Press RMS/START again to start RMS playback.

Note

For more information on the availability of Sony stereo receivers with a remote commander with RMS capability, contact your nearest Sony dealer.

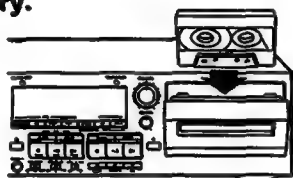
Recording (Only on Deck B)

Follow this procedure to record a source on a cassette (deck B only).



- 1** Insert a cassette into deck B.
Wind the tape to the recording starting position if necessary.

Deck B



- 2** Perform automatic calibration, if desired (see page 14) (TC-WR545 only).
If not, go to step 3.

- 3** Set DOLBY NR.



- 4** Select the side(s) to be recorded.

To record on one side	DIR MODE
To record on both sides	DIR MODE

Note

Even at the position, recording automatically stops when the tape reaches the end of reverse side.

- 5** Press to enter the recording pause mode.

Note

The direction indicator for the side opposite the specified one will flash for three seconds to indicate that recording is possible on that side also. If, however, the tab for that side has been removed to prevent recording, the indicator will not flash.

If the tab has been removed from either side A or B, recording is impossible on the side(s). To record on a tape that is protected, cover the respective hole with tape. See "Protecting a Recording" on page 13.

- 6** Play the program source to be recorded.

- 7** Turn REC LEVEL to adjust the recording level.

See "Adjusting the Recording Level" on page 13.

- 8** Turn BALANCE to adjust the balance.

- 9** Restart the program source, if required.

- 10** Start recording.

To record on the front side of the cassette

When is on	Press once or .
When is on	Press twice.

To record on the reverse side of the cassette

When is on	Press once or .
When is on	Press twice.

Note

Pressing or twice will cause the unit first to change tape direction and then start recording in that direction.

To stop recording
Press the button.

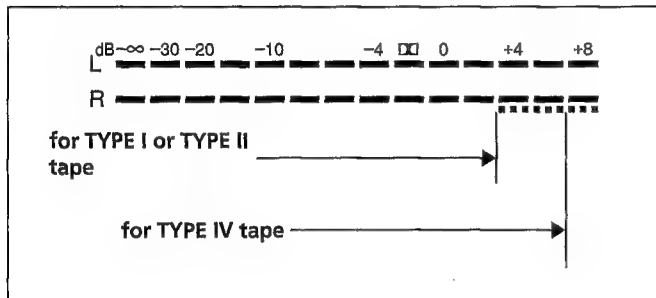
Adjusting the Recording Level

The proper recording level, which differs according to the tape type, is indicated on the peak level meter for each tape type.

Adjust the REC LEVEL control as high as possible without exceeding the recommended range for the inserted tape.

Peak level meter readings by tape type

Recommended maximum peak level meter readings.



Tips on recording level adjustment

Setting the recording level too low will produce a hissing sound, while setting it too high will produce distortion. Generally, the proper recording level for high and low frequencies is lower than that for middle frequencies. When recording program sources with many high and low frequencies, set the level to a relatively low position, then make adjustments according to recording results.

Recording FM Broadcasts with the Dolby NR System (TC-WR545 Only)

If your tuner does not have an MPX (multiplex) filter, or, if equipped, the filter is not working effectively, set the MPX FILTER switch to ON when recording FM broadcasts with the Dolby NR system.

The multiplex filter eliminates remnants of the 19 kHz stereo carrier and 38 kHz subcarrier signals which may impair the operation of the Dolby NR system. Be sure to turn on the MPX FILTER switch when using the Dolby NR system.

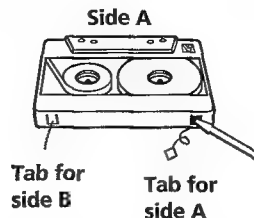
What Is the Dolby HX PRO System? (TC-WR545 Only)

The Dolby HX PRO system provides precise bias control during recording to reduce distortion and improve linearity in the high-frequency range. The result is recorded sound that is highly faithful to the original. Since the HX PRO system operates only during recording, the same high-quality sound is produced even during playback on other tape decks. The HX PRO system is independent from the Dolby NR system and is unaffected by the Dolby NR setting.

Protecting a Recording

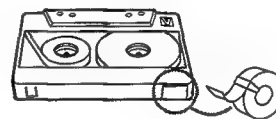
To protect a recording on side A or B

Break out the respective tab.



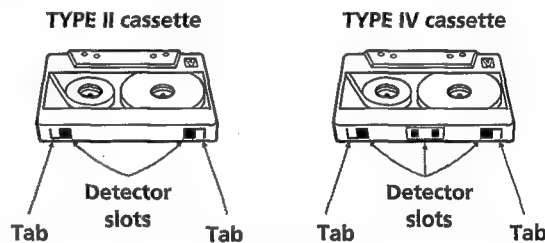
To record on a cassette that is protected

Cover the respective hole with tape.



When using TYPE II or TYPE IV cassettes

Be careful not to cover the detector slots which are necessary for automatic tape-type detection.



Cassette Care

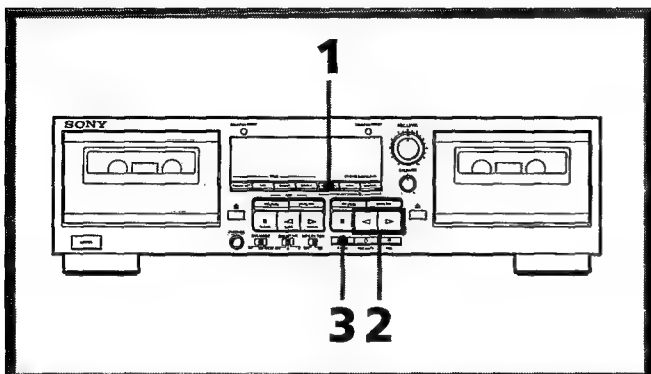
- Avoid touching the tape surface of a cassette to prevent contamination of the heads by dirt, dust, or oil on the skin.
- Keep cassettes away from equipment with magnets, such as speakers and amplifiers, as erasure or distortion of the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures, or moisture.

Note on cassettes longer than 90 minutes

We do not recommend the use of cassettes longer than 90 minutes except for long continuous playback.

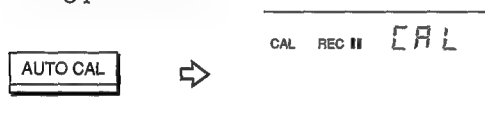
Automatic Bias Current and Recording Level Calibration (TC-WR545 Only)

Though the Automatic Tape Selection (ATS) system in your unit automatically sets the equalization characteristics, bias current and recording level to suit the magnetic properties of each tape type, doing the automatic calibration procedure below for the bias current and recording level may allow you to get even better recording results, especially in conjunction with the Dolby NR system.



1 Press AUTO CAL.

The CAL indicator on the display panel lights up, CAL appears on the counter and the unit enters recording pause mode.



2 Press > or < to select the side to be recorded.

To select the front side, press > .

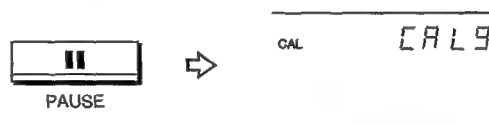
To select the reverse side, press < .

If there is no response when you press either button, that side is record protected and cannot be used for recording.

See "If the cassette is record protected" on next page.

3 Press II .

The unit fastwinds a short distance, the counter begins counting down from 9 to 0 and the unit performs recording, rewinding and playback as part of the calibration process.



After automatic calibration is completed, the tape rewinds to the original position, the counter returns to normal and the unit stops.

4 Continue with step 3 on pages 12 to record a source.

To cancel the automatic calibration function

Press the ■ button.

Notes on recalibration

As long as the unit stays on, all calibration data are saved and applied by the system whenever you insert a cassette of the same type (I, II or IV).

The CAL indicator lights up when existing calibration data are applied. However, since cassettes of the same type also vary in their characteristics, we recommend that you repeat the automatic calibration procedure each time you insert a new cassette.

To recalibrate:

- 1 Insert the cassette.
The CAL indicator lights up.
- 2 Press AUTO CAL.
The CAL indicator turns off and the unit recalls the existing calibration data for that tape type.
- 3 Continue from step 1 of the automatic calibration procedure.

Inserting a Blank Space During Recording — Record Muting

Notes

- Since the unit records a test tone on the tape during automatic calibration, recorded material on the tape is erased where the test tone is recorded.
- We recommend the use of relatively new tape and clean heads to obtain the best calibration results. Excessively worn tape or dirty heads may result in incorrect calibration values.
- All calibration data are erased when you turn off the unit.
- The automatic calibration function works only when both decks are stopped. Playback on deck A is disabled during automatic calibration on deck B.
- It is unnecessary to select the Dolby NR system when performing automatic calibration since the Dolby NR setting does not affect the calibration results.

If the CAL indicator flashes continuously

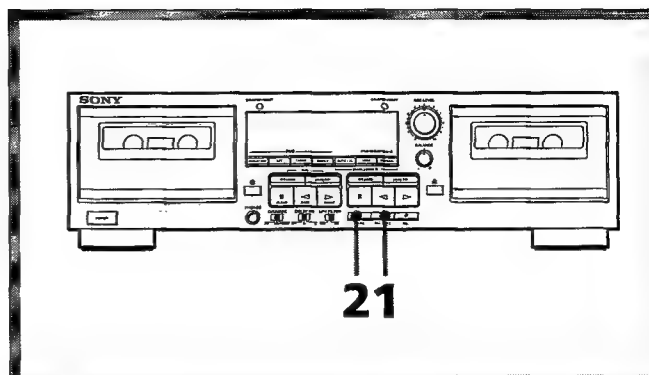
The automatic calibration process has been interrupted by:

- The end of the tape. Reverse the tape direction or fastwind to a new position that allows recording of the test tone.
- Damaged tape or dirty heads. Change the cassette or clean and demagnetize the heads.

If the cassette is record protected


- If both record-protect tabs have been removed (see page 13), the CAL indicator flashes three times and automatic calibration cannot be performed.
- If only the selected side is protected, the direction indicator for the other side flashes and calibration is possible only in that direction.
- If you attempt to change from an unprotected to a protected side in step 2, the unit will not respond and automatic calibration is possible only in the selected direction.

The Record Muting function allows you to insert a four-second blank between selections to enable proper Multi-AMS operation (see page 9), or replace unwanted recorded material with a blank of any length.



1 While recording, press and release .

The REC indicator starts to flash. During this time, no incoming signals are recorded on the tape.


After four seconds, the  indicator lights up and the unit enters recording pause mode.






2 Press to resume recording.




Note

Pressing the  button during normal-speed dubbing (see page 16) does not affect playback on deck A.

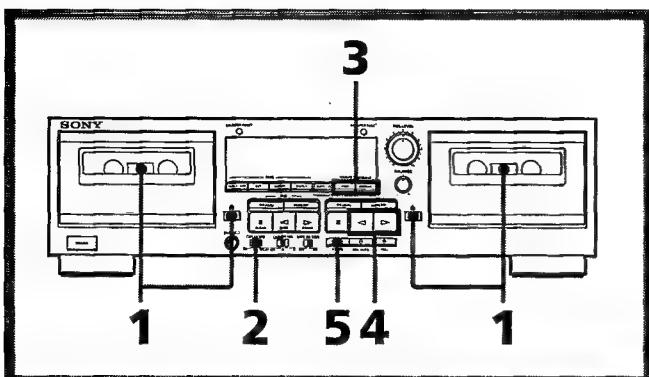
To create a blank longer than four seconds

Press the  button for the specified length of time. After four seconds, the REC indicator flashes at a faster rate. When you release the  button, the  indicator lights up and the unit enters recording pause mode.

Press the  button to resume recording.

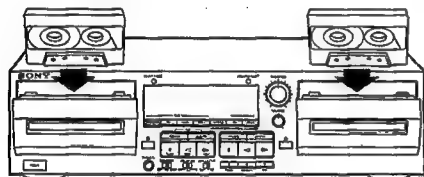
Dubbing a Tape

Use the dubbing function to copy a tape in deck A to a tape in deck B. High-speed dubbing is convenient for dubbing entire tapes while normal-speed dubbing is handy for tape editing.



1 Insert cassettes into both tape decks.

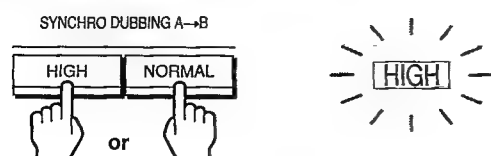
Recorded tape into deck A Blank tape into deck B



2 Select the direction mode.

One side	
Both sides	<p>Dubbing of the reverse side starts independently of deck A.</p>
	<p>Dubbing of the reverse side starts simultaneously with deck A.</p>

3 Press HIGH or NORMAL to select the dubbing speed.



4 Select the side on which to start dubbing.

To dub from the front side, press \triangleright .

To dub from the reverse side, press \triangleleft .

5 Press II on deck B to start dubbing.

To stop dubbing

During normal-speed dubbing, press the ■ button on deck B.

During high-speed dubbing, press the ■ button on either deck A or B.

During high-speed dubbing

Only the ■ button is operative.

If the NORM or HIGH speed indicator flashes three times

Either one or both tabs of the cassette inserted into deck B have been removed, making dubbing impossible for that side. Cover the hole(s) with tape (see page 13).

Is it necessary to adjust the recording level and select the Dolby NR system?

It is unnecessary since the tape in deck B is automatically recorded with the same recording level and Dolby noise reduction system as the original in deck A.

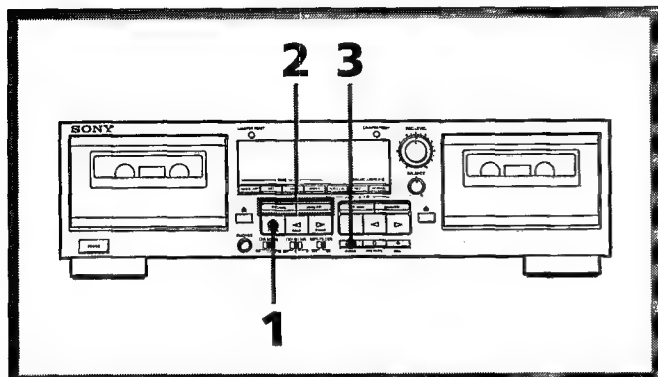
The Dolby system must, however, be set to match the tape in deck A when the sound is monitored during normal-speed dubbing.

Note on tape dubbing

If the sound is affected by the proximity of a television set during high-speed dubbing, turn the television set off or move it away from the deck.

Dubbing Only Specific Portions

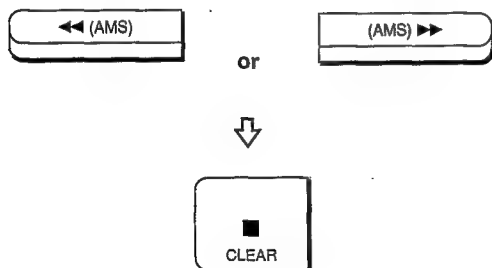
Follow this procedure to dub only specific portions of selections. Note that this is only possible in the normal-speed dubbing mode.



- 1** During dubbing, press ■ on deck A at the start of a selection to be skipped.

Deck A enters the stop mode and deck B enters the recording pause mode.

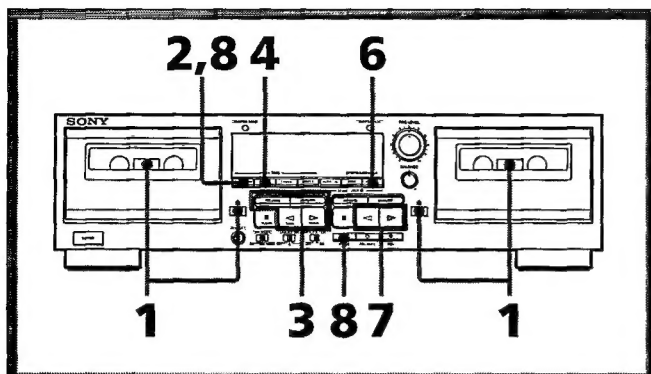
- 2** Locate the starting position of the portion to be dubbed on deck A.



- 3** Press II on deck B to resume dubbing.

Dubbing Selections in a Specified Order — RMS Dubbing (TC-WR545 only)

Follow this procedure to dub selections being played back from an RMS program. Note that RMS dubbing takes place only at normal playback speed.



1 Insert cassettes into both tape decks.

2 While the tape is stopped, press RMS/START.

3 Press \triangleright or \triangleleft to select the front or back side of the tape, and \ll or \gg to specify the selection.

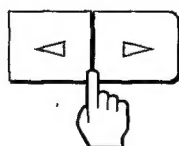
4 Press SET to program a selection.

5 Repeat steps 3 and 4 to program other selections.

6 Press NORMAL to change the unit to dubbing standby mode.



7 Select the side of the tape in deck B to be dubbed.



To dub on the front side, press \triangleright .
To dub on the reverse side, press \triangleleft .

You can press \bigcirc to make a blank space of four seconds or more on the tape in deck B before the start of RMS dubbing. For details, see page 15.

8 Press RMS/START or II on deck B to start dubbing.



Deck B enters recording pause mode while deck A searches for the selection to be played. When playback starts on deck A, dubbing automatically starts on deck B. This is preceded by the recording of a 10-second blank on the tape in deck B if you begin dubbing right after:

- you insert the cassette into the deck.
- you fastwind the tape by pressing \ll (or \gg) allowing the deck to stop automatically when the tape reaches the end.

To stop RMS dubbing

Press the \blacksquare button on deck B. RMS dubbing stops and the unit returns to RMS mode.

Maintenance

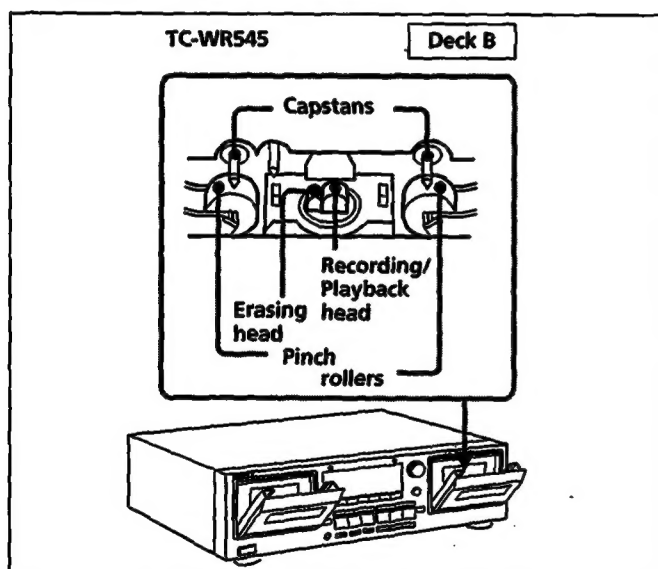
Cleaning the Heads and Tape Path

Clean all surfaces over which the tape travels after every ten hours of operation to guard against:

- low-quality sound
- a decrease in sound level
- excessive wow, flutter or drop-out
- incomplete erasure
- impairment of recording function

To obtain high-quality recorded sound, we recommend cleaning before every recording.

- 1 Press \triangle to open the cassette holder. Grasp the front holder on both sides and gently lift to remove it.**
- 2 With the unit turned off, wipe the heads, the pinch rollers and the capstans with a cotton swab slightly moistened with alcohol or a commercially available cleaning fluid for tape decks.**
- 3 Replace the cassette holder.**



Do not insert a cassette until the cleaned areas are completely dry.

Demagnetizing the Heads

After 20 to 30 hours of use, or when you notice hiss and/or loss of high frequencies, the residual magnetism built up on the heads should be removed.

- 1 Turn off the power.**
- 2 Demagnetize the heads with any commercially available demagnetizer. Refer to the instruction manual of the demagnetizer for detailed instructions.**

Cleaning the Cabinet

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvents such as alcohol or benzine.

Specifications

Recording system 4-track 2-channel stereo
 Fast winding time Approx. 90 sec. (with Sony C-60 cassette)
 Bias AC bias
 Signal-to-noise ratio (at peak level and weighted)

Cassette (Dolby NR OFF)	Type IV	Type II	Type I
	58 dB	57 dB	55 dB

S/N ratio improved (approximate values)
 with Dolby B NR on: 5 dB at 1 kHz; 10 dB at 5 kHz
 with Dolby C NR on: 15 dB at 500 Hz; 20 dB at 1 kHz

Harmonic distortion
 0.4% (with Sony Type I, 160 nWb/m, 315 Hz, 3rd H.D.)
 1.8% (with Sony Type IV, 250 nWb/m, 315 Hz, 3rd H.D.)

Frequency response (Dolby NR OFF)

Cassette Model	Type IV cassette	Type II cassette	Type I cassette
TC- WR545/ WR741	30 - 18,000 Hz (± 3 dB, IEC) 30 - 13,000 Hz [± 3 dB (-4 dB) recording]	30 - 17,000 Hz (± 3 dB, IEC)	30 - 15,000 Hz (± 3 dB, IEC)

Type IV: Sony Type IV (METAL)
 Type II: Sony Type II (HIGH)
 Type I: Sony Type I (NORMAL)

Wow and flutter $\pm 0.14\%$ W.Peak (IEC)
 0.08% W.RMS (NAB)
 $\pm 0.19\%$ W.Peak (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	0.16 V
	Input impedance	47 k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.5 V at a load impedance of 47 k ohms
	Load impedance	Over 10 k ohms
Headphones (stereo phone jack) (TC-WR545 only)	Output level	1 mW at a load impedance of 32 ohms

General

Power requirements

Model for U.S.A. and Canada:
 120 V AC, 60 Hz
 Model for the United Kingdom:
 240 V AC, 50 Hz
 Model for Australia:
 240 V AC, 50/60 Hz

Power consumption

25W

Dimensions

TC-WR545 (for U.S.A. and Canada):
 Approx. 430 \times 123 \times 290 mm
 (w/h/d)
 (17 \times 4 $\frac{7}{8}$ \times 11 $\frac{1}{2}$ inches)
 TC-WR545 (for the United
 Kingdom and Australia):
 Approx. 430 \times 123 \times 300 mm
 (w/h/d)
 (17 \times 4 $\frac{7}{8}$ \times 11 $\frac{7}{8}$ inches)
 TC-WR741:
 Approx. 430 \times 118 \times 290 mm
 (w/h/d)
 (17 \times 4 $\frac{3}{4}$ \times 11 $\frac{1}{2}$ inches)
 including projecting parts and
 controls
 Approx. 4.5 kg (9 lbs 15 oz)

Mass

Supplied accessories

Audio connecting cords (2)

Optional accessories

Wireless remote commander RM-J902

Design and specifications are subject to change without notice.

Troubleshooting Guide

The following trouble checks will help you correct the most common problems encountered with your tape deck. Should any problems persist after you have made these checks, consult your nearest Sony dealer.

Before proceeding with these trouble checks, verify that:

- The power cord is firmly connected.
- The amplifier connections are firmly made.
- The heads, capstans and pinch rollers are clean.
- The amplifier controls and switches are correctly set.

Function Buttons and Tape Transport Problems

Symptom	Cause	Remedy
The function buttons do not work.	The cassette holder is not fully closed.	Close the holder completely.
	The cassette is not properly inserted.	Insert the cassette correctly.
	You pressed the button immediately after turning on the power.	Wait until the II indicator stops flashing.
The ● button does not work.	There is no cassette in the holder.	Insert a cassette.
	The record-protect tab has been removed from the cassette.	Cover the hole with tape. (See page 13.)
The automatic shut-off mechanism operates before the end of the tape .	The tape is slack.	Take up the tape slack.
	The cassette shell is deformed.	Use another cassette.
Excessively loud tape transport noise during fast winding.	This noise is caused by the cassette and is not a mechanical problem.	—
The ⏮ button does not work.	This occurs when the unit is playing back or recording.	Press the ■ or II button to stop playing back or recording first.

(Continued on next page)